

The Effect of Using Cartoons on Developing Omani Grade 4 Students' Awareness of Water Issues and their Attitudes towards Using them in Teaching Social Studies

Ahmed Hamed Al-Rabaani¹ & Intisar Hamed Al-AAmri²

Abstract

The study aimed at investigating the effect of using cartoons on developing grade four students' awareness of water issues. It also aimed at examining their attitudes towards using cartoons in social studies lessons. An experimental design was used with pre-posttest. The experimental group consisted of (33) male and female students while the control group consisted of (33) male and female students. An awareness of water issues' test and attitudes questionnaire was used to collect data. The results showed that using cartoons were significantly increased students' awareness of water issues. It also found that students had very high positive attitudes toward using cartoons in social studies lessons.

Keywords: *cartoons, water awareness, attitudes, social studies, Oman.*

Introduction

Social studies textbooks include a lot of political, economic, social, culture, environmental, scientific and technological events. These events are viewed differently by people and presented in several ways (Tarman, 2016). Cartoons are one of the most popular tools that artists use to express their opinion about different situation in a very simple, attractive, critical and meaningful manner (Martin, 2007; Cundall, 2007). These cartoons are used widely in newspapers because they are welcomed by young and old people and are easily understood. According to Özay (2013, 932) the cartoons can be used for both children and adults because they are favored by both and the image is "easy on the eye and easy on the brain". Thus they are used in teaching with different ages of students as visual tool that allow the teacher to present issues, phenomenon or events that society is concerned about them.

The cartoons have the ability to attract students' attention through humor, caricature, irony, stereotypes symbols and encourage to them to focus on the main idea of the image. They also develop their reading, analysis and interpretation skills. These cartoons motivate students to think

¹ Assoc. Prof. Sultan Qaboos University, rabaani@hotmail.com

² MEd. Sultan Qaboos University, entesar8310@gmail.com

critically, evaluate artists' views and present their own views on the image focal idea (Özer, 2005; Dalacosta et al., 2009). The effectiveness of image symbols enhances students' concentration on the topic which is being discussed which is very important element of the learning process and in creating an active learning environment (Kleeman, 2006; Naylor, 2007; Birisçi et al., 2008; Fleischer, 2010).

According to Teke et al (2013) cartoons are a powerful tool that includes entertaining elements which encourage critical thinking of their main idea. The entertaining elements also motivate students to laugh and make a funny comment which is important in enhancing their interaction with the idea of the cartoons and drives their brain to think deeply about the issue. Wanzer (2006) indicates that laughing promotes social cooperation between people and enhances motivation, imagination and creativity. It also reduces stress, enhances self-confidence and motivates shy students to participate effectively (Chiasson, 2002; Parrott 1994).

The students' concentration on the main idea of the image leads them to establish their own ideas and raise arguments (Fleischer, 2010). It also encourages them to make comments and establish connections and weaves a story in minds (Cevat & Oguzhan, 2014; Zousel, Rule, & Logan, 2013). Such process expands their understanding of the idea being discussed and encourages them to search for more information in different resources. The use of cartoons increases the productivity of the active learning environment by increasing students' creativity and their abilities to organize what they have learned, and apply this in their daily life (Ross, 2012).

The effectiveness of cartoons on the learning process and development of educational outcomes has received wide attention by researchers who examined it empirically. It has been found that cartoons have effectively increased students achievement (Keogh et al., 1998; Al-Qurashi, 2001; Baksh, 2002; Özalp, 2006; Rule & Auge, 2005; Üner, 2009). And have also enhanced students' attitudes and motivation (Hackett & Betz, 1989; Özalp, 2006; Çiğdemtekin, 2007; Üner, 2009; Cengizhan, 2011; Şengül & Derelih, 2013) and increased their critical thinking skills (Micheal, 2011).

Based on the proved effectiveness of using cartoons as a teaching tool, the researchers are concerned in this study with investigating their effectiveness on developing four grade students' awareness of water issues. The concern about awareness of water issue comes from the issue of fresh water shortage in Oman where Oman located in one of the driest areas on the planet. According to Ministry of Municipality and Water Resources (2010) the annual rainfall is 100 mm

and 93% of it evaporates because of high temperature. The issue of fresh water shortage is increasing due to the rapid growth of population, development projects and change in life style where people consume more water than in the past where people used to use the Falaj system, which is still in use in some villages today, and consists of a small man made irrigation steam. (Al-Rabaani, 2005; Al-Rabaani & Al-Salami, 2010).

The increased demand has driven the government to build many water dams on **wadies** (Rainfall water stream) to charge underground water reserves and increase number of desalination plants to (47) by the year 2007. It also has started a cloud ionization project to increase the amount of rainfall and runs many water awareness campaigns through media, environmental associations, mosques and through education (Ministry of Municipality and Water Resources, 2015).

In spite of all government efforts, the shortage of fresh water is a continuing issue and there is a need to change people's water behavior through enhancing their realization of its seriousness in both short and long term. The studies which are concerned with students water awareness sadly showed that they have low levels of water awareness (Al-Yahyeei, 2012, Al-Rabaani & Al-Meklafi, 2009; Al-Shauli & Al-Rabaani, 2011). This disturbing finding has encouraged the researchers to consider the issues which might lie behind low levels of water awareness. A previous study of social studies text books used in Omani schools showed that there is in fact a focus on water issues, so ignorance cannot be considered an attributing factor (Al-Rabaani, 2005; AL-Abri, 2011; Al-Rabaani & Al-Salami, 2010).

Thus, the researchers think about using a teaching tool which can make difference in students' water awareness and based on the literature it found that cartoons can make differences. The selection of cartoons as a teaching tool to promote students' water awareness is due to that water issue is controversial where some believe that as the government increase number of desalinations plants and people pay the cost of water consumption so why we should ask them to rationale its use. The cartoons are the best tool to present this controversial issue that allow students to argue and try to come up with a rational view. Also the cartoons are suitable for age of grade four students and it is important to start raising water awareness early. Also, the reason for targeting the fourth grade students is due to the fact that the social studies' textbook includes a Unite about water which enabled the researchers to teach it through using cartoon for experimental group.

Research Questions:

- What is the effectiveness of using cartoons on developing grade four students' water awareness?
- What are grade four students' attitudes towards using cartoons in social studies lessons?

Research objectives:

The study aimed at:

- Examining the effectiveness of using cartoons in developing water awareness.
- Examining students' attitudes toward using cartoons in social studies lessons.

Methodology

A quasi-experimental design with pre-test/posttest for both experimental and control group was used. The experimental group studies with using cartoons while the control group studies with the traditional method (Kumar, 2011). To ensure the equivalence of both groups, a pretest was applied and a t-test was used which showed that there was no significant difference between the two groups.

Table 1

A Quasi-Experimental Design

Groups	Pre-test	Treatment	Post-test
Experimental group	Water awareness test	Instructional techniques using cartoons	Water awareness test & Attitudes questionnaire
Control group	Water awareness test	Traditional methods	Water awareness test

Sample

The study was conducted with a total of (65) 4th grade male and female' students' at one school in Al-Dakiliah province. Of total (33) students were part of the experimental group and (32) of the control group. The number of male and female students in each group is equal and they were at age of 10 years. These students come from different socio-economic status.

Data collection

Data was collected by using an awareness test and attitudes questionnaire. The awareness test was developed based on the analysis of a unit from the Grade 4 Social Studies textbook, which focused on water issue (Al-Yahyaei, 2012; Al-Rabaani, 2005; Al-Abri, 2011). The test consisted of 20 questions, (5) of them were multiple choice, (10) of them were complete and (5) of them were open sentences. The five Likert scale consisted of (13) items divided into two domains: the importance of using cartoons in teaching social studies and using cartoons as teaching tool

The validity of water awareness test and attitudes questionnaire was examined by a panel of judges from Sultan Qaboos University and social studies supervisors from the Ministry of Education .The reliability of the awareness test was also examined by applying it to a trial group which consisted of 30 students from different schools. The results of Chronbach's Alpha were (.74). The reliability of the questionnaire was obtained from applying it to the experimental group after treatment, this was .89).

The pretest and the questionnaire were administered before starting the conducting the experiment for both groups (experimental and control) in fifth of April. The implementation took around three weeks, three lessons per week for both groups from 12 April 2015 till 30 April 2015. The control group was taught by the school teacher while the experimental group was taught by the researchers. Before the implementation, the experimental group was taught for two lessons about cartoons reading and drawing to ensure that they can easily understand and use them during the experiment lessons.

During the experiment, the experimental group was divided into subgroups (5-6 students in each group). They were asked to read cartoons, explain what they understand from them, express their views about the presented issue in the cartoon, why it was presented in this way, voice their agreement/disagreement to artist's point of view and how they view such issue in their local area. Also the experimental group students were asked to draw their own cartoons about water issue. At

the end of the experiment the group the students who drew the best cartoon was awarded by the researchers.

Results:

- What is the effectiveness of using cartoon on developing grade four students' water awareness?

Table 2

T-test Results of Post-Test Results of Experimental and Control Group

Groups	Mean	SD	T-value	df	sig
Experimental group	14.59	4.95	4.76	63	.000
Control group	9.43	3.64			

The results showed statistically significant differences between experimental and control groups in favor of the experimental group. The mean of the experimental group as (14.59) from a total of (20) which means that the awareness level reached 72.9% compared to the control group, whose mean was (9.43) out of a total score of (20) which represents 47.1%, in other words less than 50%. In comparison, we can see that the use of cartoons has increased the awareness of water issues of the experimental group by about 25.8%.

- **What are grade four students' attitudes towards using cartoons in the social studies lessons?**

Table 3

Students' Attitudes Towards Using Cartoons in Social Studies Lessons

Domains	Mean	SD
Importance f using cartoons in social studies lessons	4.7	.5
Using cartoons as teaching tool	4.8	.3

Average	4.7	.4
---------	-----	----

The results showed that students have high positive attitudes towards using cartoons in social studies lessons and toward using them as a teaching tool. The students displayed high levels of interest in using cartoons as an effective tool for creating a positive learning environment.

Results Discussion

Based on the findings, it can be said that using cartoons in the Social Studies lessons has significantly increased students' water awareness level compare to the traditional method. The cartoons created an active learning environment when students began to look at them and read them. The change in students' interaction with their teacher and with their peers was observed even with those students who were considered normally to be less active participants in class. One reason for this could be that comics, irony, satire symbols included in the cartoons. It could also be due to the humorous ways that artists often present water issues which drive students to laugh initially, but later makes them concentrate more when they start to analyze the cartoon content.

The cartoons create a new learning environment where students enjoy analyzing their content, trying to understand the main point of the artists. The students' deep concentration is obvious as they keep working till the last minute of the lessons, they cooperate more fully with peers and can be seen making comments to each other about water behavior. Their attention drives them to focus on the main point, and discuss links with their daily life and environment. These results are in line with previous studies which show the effect of cartoons in harnessing students' attention. (Cevat & Oguzhan, 2014; Zousel, Rule, & Logan, 2013; Teke etl, 2013; Fleischer, 2010; Burner, 2009).

The cartoons also motivate students to express their opinions freely, debating ideas with each other and giving examples of poor water behavior observed in some people. It has even been observed that students start to express their concerns about water behavior by drawing their own cartoons. Their drawings reflect their views of water behavior in their local environment like protection of water stream from pollution and rational use of water in irrigation of plants at home or farms They air their concerns for the future when they observe cartoons showing the increase

of desertification and death of plants in farms due to the shortage of water. These cartoons drove them to suggest solutions to change water behavior, rational use of water and protecting water from pollution. Such results prove what has been stated on literature hat using cartoons develops students' imagination and creativity (Ross, 2012; Chiasson, 2002; Parrott 1994).

The cartoons create an amusing learning environment which is important for students at this age, who prefer playing and moving around during lessons. The funny learning environment encourages students to use their multiple -intelligence during drawing of their own cartoons and students' have also been inspired to draw posters and to tell friends and family about water awareness issues, as a result of what they have viewed in the cartoons. Such results are in line with previous studies which showed that the use of cartoons positively affects attitudes and interests towards the topic (Hackett & Betz, 1989; Özalp, 2006; Çigdemtekin, 2007; Üner, 2009; Cengizhan, 2011; Şengül & Derelih, 2013)

The results of the questionnaire showed that students have strong positive attitudes toward using the cartoons in social studies lessons. They believe that using cartoons has enabled them to understand water issues to a greater degree, to interact effectively in the classroom and to develop their knowledge, critical thinking skills and attitudes. They also believe that teaching through the use of cartoons creates a more open learning environment and helps to develop students' self-confidence. It also showed that students' belief that using cartoons made social studies lessons more attractive and they recommend using them in other lessons and subjects.

Conclusion

The results show that using cartoons has a positive effect on students water awareness because they were able to enrich the learning environment and created a student-centred learning environment. The use of cartoons encourages students to think and discuss their ideas and to link these with their local environment. The research found that teachers strongly support using cartoons in the Social Studies lessons and find them to be a supportive learning tool.

Acknowledgement

We would like to acknowledge all those who have contributed in conducting this study and students in experimental and control groups and cooperative teachers.

References

- Al-Abri, Z. (2011). *The extent of Including water concept in social studies textbooks of basic education (5-10) in the Sultanate of Oman*. MA Thesis, College of Education Sultan Qaboos University.
- Al-Qurashi, A .(2001). The effect of using cartoons in developing third preparatory students current events interpretation skills , *Egyptian Association of Curriculum & Instruction*, 21, 52-70 <http://kenanaonline.com/users/HaresAmmar/posts/282028>
- Al-Rabaani, A & Al- Salme, H.(2010). Information related to the world continent in social studies textbooks in the Sultanate of Oman, *Arab Journal of Education & Psychology*, 8(2) 40 – 64.
- Al-Rabaani, A. & Al-Mekhlafi, M .(2009). Attitudes of Sultan Qaboos University Students towards Some Environmental Problems and their Willingness to Take Action to Reduce them, *Journal of Social Science*, 5(1), 9 – 15.
- Al-Rabaani, A. (2005). The extent of Including Water Problem Dimensions In Omani Secondary School Geography Textbooks, *Egyptian Council For Curriculum & Instruction*, 105 (August), 33 – 52.
- Al-Shuaili,A & Al-Rabaani, A. (2010) The Climate Changes Awareness Among Science and Social Sciences Student Teachers at Sultan Qaboos, *Journal of Educational Science*, 6 (4) 269-284
- Al-Yahyeei, R. (2012). *Water awareness among post basic education students in the Sultanate of Oman*, MA Thesis. College of Education, Sultan Qaboos University.
- Baksh, G. (2002). *The effect of using cartoons on achieving cognitive aim of society subject among first secondary students in Yemen*. MA Thesis, <http://www.yemen-nic.info/contents/studies/detail.php?ID=9378>
- Birisçi, S., Metin, M. & Karakas, M. (2010). Pre-service elementary teachers' views on concept cartoons: A sample from Turkey. *Middle-East Journal of Scientific Research*, 5 (2), 91-97
- Cengizhan, S. (2011). Modüler öğretim tasarımıyla entegre edilmiş kavram karikatürleri hakkında öğretmen adaylarının görüşleri. *Eğitim ve Bilim*, 36(160), 93-104.
- Cevat, E & Oguzhan, K. (2014). The effect of educational practice with cartoons on learning outcomes, *International Journal of Humanities and Social Science*, 4 (14)223-234

- Chiasson, Paul-Emile. 2002, Humor in the Second Language Classroom;
- Çiğdemtekin, B. (2007). *Fizik eğitiminde elektrostatik konusu ile ilgili kavram yanılıqlarının giderilmesine yönelik bir karikatüristik yaklaşım*. Yayımlanmamış yüksek lisans tezi, Gazi Üniversitesi, Eğitim Bilimleri Enstitüsü, Ankara. Retrieved on 4 March 2015 from <http://tez2.yok.gov.tr>
- Cundall, M. K. Jr. (2007). Humor and the limits of incongruity. *Creativity Research Journal*, 19(2-3), pp. 203-211.
- Dalacosta K, Kamariotaki-Paparrigopoulou M., Palyvos J.A., Spyrellis N. (2009). Multimedia application with animated cartoonss for teaching science in elementary education. *Computers & Education*, 52:741–748.
- Fleischer J.A. (2010).*Using Cartoonss for type education*. Retrieved on 17 January 2015 from <http://www.docstoc.com/docs/31863960/Using-Cartoons-for-Type-Education>
- Fleischer. J.A. (2010).*Using Cartoons for type education*. <http://www.docstoc.com/docs/31863960/Using-Cartoons-for-Type-Education>
- Greenwald, S. J., & Nestler, A. (2004). Engaging students with significant mathematical content from the simpsons. *PRIMUS*, 14(1), 29-39.
- Hackett, G., & Betz, N. E. (1989). An exploration of the mathematics self efficacy, mathematics performance correspondence. *Journal for Research in Mathematics Education*, 20, 261-273.
- Kleeman, G. (2006). Using Cartoons To investigate Social And Environmental issues. *Ethos*, 14(3), 9-19
- Kumar, R. (2011) *Research methodology a step-by step guide for beginners*. Loss Angelees: SAGE
- Martin, R. A. (2007). The psychology of humor: An integrative approach. Burlington, MA: Elsevier Academic Press.
- Micheal, M. (2011). The use of cartoons as a teaching tool to enhance students learning economic education, *J Soc Sci*, 26(2): 117-130
- Ministry of Municipality and Water Resources,(2015) *Water projects*. Retrieved on 15 August 2015 from. http://mrmwr.gov.om/new/Page.aspx?id=71&li=8&Type=W_Sec&Slide=false
- Naylor, B., Naylor S. & Mitchell, G. (2000). *The Snowman's Coat*. London, Hodder Childre's Books

Özalp, I. (2006). *Karikatür tekniğinin fen ve çevre eğitimde kullanılabilirliği üzerine bir araştırma. Yayımlanmamış yüksek lisans tezi, Celal Bayar Üniversitesi, Fen Bilimleri Enstitüsü, Manisa* Retrieved on 4 March 2015 from. <http://tez2.yok.gov.tr>

Özay, E. (2013). Effect of cartoons on students' achievement and attitudes in biology teaching (Endocrine system), *Eylül 2013 Cilt:21 (3),931-944*

Parrott, T. (1994). Humour as a teaching strategy. *Nurse Educator*, 19(3): 36-38.

Ross P.M. (2012). *The use of cartoonss in teaching and learning invertebrate biology*. Retrieved on 12 April 2015 www.bioassess.edu.au.

Rule, A. C., & Auge, J. (2005). Using humorous cartoonss to teach mineral and rock concepts in sixth grade science class. *Journal of Geoscience Education*, 53(5), 548-558.

Şengul, S. & Dereli, M. (2013). The Effect of Learning Integers Using Cartoonss on 7th Grade Students' Attitude to Mathematics, *Educational Sciences: Theory & Practice* 13(4) 2526-2534.

Tarman, B. (2016). Innovation and education. *Research in Social Sciences and Technology*, 1(1), 77-97.

Teke, E., Pehlivan, M & Haceminoglu, E. (2013) The effect of the science and technology course integrated with cartoonss on students achievement and attitudes, *Journal of Educational and Instructional Studies*, 3 (2) 129- 134.

Üner, İ. (2009). *İlköğretim okullarında karikatürle öğrenmenin öğrencilerin başarı ve tutum düzeylerine etkisi. Yayımlanmamış yüksek lisans tezi*, Marmara Üniversitesi, Fen Bilimleri Enstitüsü, İstanbul. Retrieved on 26 March 2015 from <http://tez2.yok.gov.tr>

Van Wyk MM .(2007). *The Use of Cooperative Learning in Economics in the Further Education and Training Phase of the Free State Province*. Ph.D Thesis, Unpublished. Bloemfontein: University of the Free State

Van, W.(2009). *Students' reflections regarding the use of cartoonss as a teaching technique in the Economics classroom*. Paper presented at EASA International conference, Illovo Beach, Durban, South Africa 13-16 January

Wanzer, M., Frymier, A., Wojtaszczyk, A., & Smith, T.(2006).*Appropriate and inappropriate uses of humor by teachers*. Communication Education

Zousel, M. L., Rule, A. C., & Logan, S. R. (2013). Teaching primary grade students perfectionism through cartoonss compared to bibliotherapy. *International Electronic Journal of Elementary Education*, 5(2), 199-218.